WHAT IS CLAIMED IS:

1. A method for switching optical channels automatically and synchronously, comprising the steps of:

providing a first switching device (10) and a second switching device (10a) respectively connected to a first optical terminal (20) and a second optical terminal (20a), wherein multiple optical channels are connected between the first switching device (10) and the second switching device (20),;

detecting whether any optical signals are transmitting between the first switching device (10) and the second switching device (20) over a first one of the multiple optical channels or not;

locking one of the multiple optical channels when the optical signals are transmitting between the first switching device (10) and the second switching device (20);

switching the first switching device (10) to a second one of the multiple optical channels when there is no optical signals transmission over the first one of the multiple optical channels, and then switching the second switching device (20) to the second one of the multiple optical channels that the first switching device (10) switches to, whereby the first and the second switching devices (10, 20) are in communication.

2. The method as claimed in claim 1, wherein the switching step further comprises the steps of:

presetting a base period (T);

detecting a number of the multiple optical channels (n) that are connected between the first switching device (10) and the second switching device (20);

establishing a master-slave relationship between the first and the switching devices

(10, 20), wherein the first switching device (10) is set as a master switching device and the second switching device (20) is set as a slave switching device; and

setting a first signal detecting and waiting time (t) of the master switching device is n+1 times the base period (t = (n+1) x T), and setting a second signal detecting and waiting time (t') of the slave switching device is equal to the base period (t'=T)

whereby since the detecting and waiting time of the master switching device (10) is n+1 times longer than that of the slave switching device (10a), the master switching device (10) has an n+1 times longer period to wait for the slave switching device (10a) when the master switching device is switched to the second one of the multiple optical channels, thus ensuring that the slave switching device (10a) has sufficient time to complete a seeking cycle among the multiple optical channels and to switch to the second one of the multiple optical channels so as to communicate with the master switching device.

3. An automatic and synchronous switching device for optical channels, the switching device comprising:

at least two optical switches (11)(17), wherein each optical switch (11)(17) has multiple ports, each of the multiple ports respectively adapted to link to one of optical channels, and each optical switch (11)(17) has a common end adapted to connect to an optical terminal;

a switch-controlling control circuit (13) connected to the at least two optical switches (11)(17);

an optical power meter (12) having an output connected to the switch-controlling circuit (13) for monitoring light signals transmission over the optical channels and intercepting a small amount of the light signals, then passing the small

amount of the light signals to the switch-controlling circuit (13);

a serial interface (14) connected to an output of the switch-controlling circuit (13) for being an interface with electrical equipment,

wherein when the optical power meter (12) detects any signal over one of the optical channels, the optical power meter (12) sends a control signal to the switch-controlling circuit (13), whereby the switch-controlling circuit (13) orders the at least two optical switches to be locked to the one of the optical channels until the signal transmission is ended.

4. The device as claimed in claim 3, the switch-controlling circuit (13) comprising:

a microprocessor (130) having an output connected to the serial interface (14);

an analog/digital converter (131) connected to the microprocessor (130) for converting the small amount of the light signals into a digital signals and passing the digital signals into the microprocessor (130); and

a keypad (15) connected to the microprocessor (130) for receiving external control commands.

5. The device as claimed in claim 3, wherein the optical power meter (12) is formed with an optical splitter (120), a PIN diode (122) connected to the optical splitter, and a signal amplifier (121) connected to the PIN diode (122), wherein an output of the signal amplifier (121) is connected to the analog/digital converter (131) of the switch-controlling circuit (13), and the common end of each optical switch is connected to said optical splitter (120).